SPAWAR Systems Center PACIFIC

Electrically Small, Multi-Band Current Probe Antenna (MBCP)

SSC Pacific creates single antenna for use from 2 MHz to 2 GHz.

Background

With increasing numbers of wireless communications systems available today, more and more antennas are required to support them. In many situations, the available real estate for placement of antennas is limited. The antenna locations available on exterior surfaces of modern, stealthy U.S. Naval ships is particularly limited, especially in scenarios where multiple antennas are desired. There is strong interest in reducing the number of antennas used for communication in the 2 MHz to 2 GHz frequency band.

The Technology

Each current probe is designed for a different operating band: HF, VHF, UHF, L-band. Each of these probes couples to the mast to act as an antenna.

An example using four current probes with different operational frequency bands (HF/VHF/UHF/L) is shown in the adjacent. The antenna could be a stand alone mast or a part of the existing superstructure.

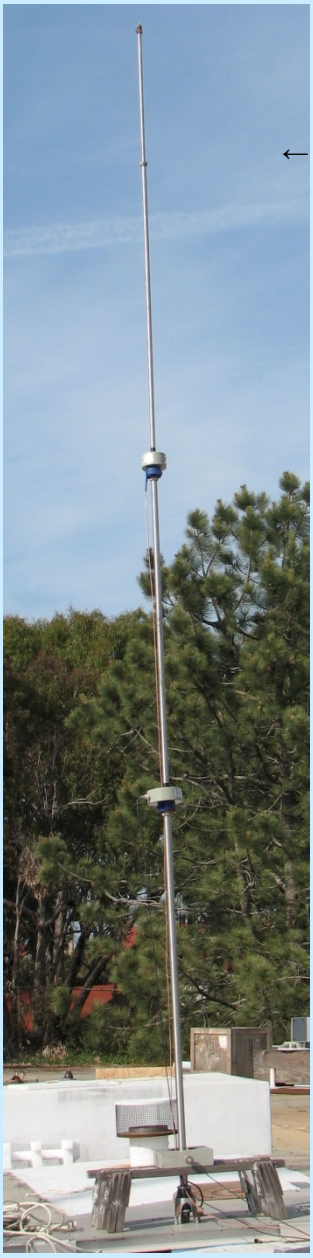
An HF current probe is placed 10” from the base of a 240” aluminum pole. At this time, the radiation patterns for this arrangement have not been characterized on the 2 MHz to 2 GHz Multi-band current probe receive antenna. The radiation pattern is expected to be omni-directional over a ground plane, but will be altered by mounting on a structure (such as a ship).

The 240” aluminum pole is one continuous electrically small antenna without chokes or traps – and the cutting of the antenna pole into multiple sections is not required as it would be to insert traps.

Related Technology

- Sea Water Antenna
- Mast Clamp Current Probe

Patent Pending



Multiband current probe assembly

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